Heterogeneously catalyzed partial gas phase oxidation of propene to acrylic acid

Abstract

In a process for heterogeneously catalyzed partial gas phase oxidation of propene to acrylic acid, the starting reaction gas mixture is oxidized at a propene loading of <160 I(STP)/I•h in a first reaction stage over a fixed catalyst bed 1 which is accommodated in two successive reaction zones A, B, and the acrolein-containing product gas mixture of the first reaction stage is subsequently oxidized in a second reaction stage over a fixed catalyst bed 2 which is a accommodated in two successive reaction zones C, D, the highest temperature of the reaction gas mixture within reaction zone A being above the highest temperature of the reaction gas mixture within reaction zone C being above the highest temperature of the reaction gas mixture within reaction zone D.